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Capitalizing on the Wireless Opportunity: Transforming the Way We Work and Live

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Introduction
Throughout history, mainstream users have initially embraced technological breakthroughs with skepticism. On the flip side, vendors and early adopters are loudly enthusiastic. The reality is that it takes time for these two viewpoints to converge. Like many of its technological predecessors, wireless technology is currently working its way through its own adoption cycle.

Today I will talk about the way that wireless technologies will transform how we work and live, and discuss the driving forces, challenges, and timeline to the adoption of wireless technologies. But first, I will discuss the networks technologies in place today and how they impact wireless data applications.

Network Technologies
An important element for all wireless communications is the technology and capabilities of the networks that support wireless. Currently, there are several major categories of networks deployed around the world.

In a nutshell, the US is transitioning rapidly from first generation analog cellular networks to second generation all digital cellular networks. Europe and much of the rest of the world has long had second generation all digital cellular networks. And over the last several years, 3G (third generation) networks have surfaced, which support higher data transmission rates and thus more useful applications. Also, a dark horse technology called WiFi or Wireless LAN has emerged as a potential competitor to 3G networks. The newer networks have, in essence, increased the size of the pipeline, enabling larger applications (i.e., movies, audio, pictures) to travel through them at a faster rate.

Although it's hard to imagine, the data speed for WiFi is 5000 times as fast as 2G. Today, a US cellular subscriber using a 2G network would spend 118 hours downloading a movie from the Internet. With a 2.5G network it would take 26 hours, a 3G network 1-4 hours and WiFi 4-5 minutes. On the other hand, a smaller application such as a text message can be downloaded from the Internet in one second regardless of whether the user was using 2G or WiFi.

While Expand Beyond software products compress and encrypt text as the primary data source to allow travel at optimal speeds on existing networks, I believe that new network technologies – 3G or WiFi – are a necessary precondition to the future widespread adoption of wireless data applications.

Wireless Applications and Business
For businesses, wireless data applications are becoming increasingly important. The forces acting on most businesses today are changing, including globalization, new technology innovations, and increased competition. In this environment, companies are being pressured to take measures to maximize employee productivity and improve customer loyalty in order to become leaders in their respective industries. Accordingly, there is renewed focus on using information technology (IT) as a tool to allow employees to accomplish more with fewer resources.

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IT organizations are also being asked by senior management to make full use of new technologies such as wireless to meet these challenges. Understandably, Chief Information Officers (CIOs) have many questions and concerns about the logistics and cost issues involved in building and supporting wireless data applications. Despite this apparent divergence, wireless data applications are already being deployed.

For instance, anyone who has ever received a UPS package has seen the wireless device that the delivery person uses to capture customer signatures. Most large urban police forces equip their squad cars with terminals that allow them to access different kinds of information. And database and system administrators are wirelessly managing their databases, servers and networks through PDAs. In the future, we can expect to see even more applications geared toward supply chain management, logistical/distribution management, telecommunications and the IT infrastructure, and sales/services support.

Wireless technologies are becoming an indispensable tool for providing more accurate and current information to transform existing business processes. However, in order for wireless data to be more widely deployed, IT organizations and CIOs need to become better educated about the technology itself, its security ramifications, and its cost/benefit justification.

Wireless Applications and Consumers

Outside the US, wireless data is a fact of life for consumers. The most successful consumer wireless data application in history is called Short Message Services (SMS). It is effectively instant messaging over cell phones. This application went from obscurity to national obsession across Europe in a very short period of time, and is primarily popular with the younger generations.

Subsequent to its widespread adoption, it has generated demand for other wireless data applications. For instance, in Scandinavia there are many places where you can use your cell phone to operate a vending machine and the charge appears on your phone bill. These types of applications are pointing to the future.

In the US, the most popular wireless application currently involves two-way data transmission, such as the Blackberry devices, that allow users to send and receive their email on wireless handhelds. In the near future, networks will be able to pinpoint the location of the user, which will allow a restaurant to detect when you have entered their neighborhood and send a coupon to your cell phone good for two dollars off tonight's special. Other capabilities will soon emerge to enhance people's lifestyles. For instance, there will be applications that can notify your cell phone when certain critical events happen – new voicemail, your refrigerator door was just opened, your wife's birthday is next Tuesday, or your mother-in-law just entered your state. In addition, gaming companies are feverishly developing ways to play multiplayer interactive games on wireless devices.

However, for these applications to become more of a reality we must have the infrastructure to support them. Also, consumers will have to be educated on the value of these applications and will likely have to see adoption on behalf of businesses before they do so. In addition, I would anticipate an increase in the use of unified messaging – where you are able to get all of your messages - email, voice messages, video messages – from a single device.

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Conclusion

Like many other technological predecessors to wireless technologies, adoption does not happen overnight. It takes a long time for the general public to adopt technologies into their daily lives. For example, 90% of US households have at least one telephone, but that adoption took 70 years. I believe the timeline for wireless adoption starts with early adopters like myself getting the message out in a grassroots effort. Next, I envision businesses investing in the technology, which we have seen to some extent, followed by consumers slowly familiarizing themselves with the benefits and value of the technology. The cycle continues with more investment from businesses, newer technologies, and broader consumer adoption. So what can you do? Become an early adopter and spread the word about the future of wireless technologies.

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